



## WEEKLY OVERSIGHT REPORT

**CH2MHILL****Weekly Summary Report  
USEPA Oversight, Sauget Area 2, Sauget, IL  
WA No. 224-RXBF-05XX / Contract No. 68-W6-0025****Week Ending Friday May 21, 2004**

This report summarizes the Interim Remedial Action (IRA) work conducted by Solutia and its contractors from May 17 through May 21, 2004 at Site R, Sauget Area 2. The current IRA fieldwork consists of site preparation, barrier wall trenching, and backfilling.

**Contractors Onsite**

Inquip Associates Inc. (barrier wall construction contractor)  
PSI (geotechnical testing subcontractor)  
Pangea (subcontractor to Inquip for site maintenance)  
URS (primary consultant for Solutia)

**Work Performed This Week**

Work at the site continued with a crew of Inquip operators and laborers performing site and trench maintenance activities. Along the east-west leg of the trench at the southernmost section of the barrier wall, approximately forty feet of trench were excavated during the week with either the small trackhoe or the Koehring trackhoe extending the open trench to station 6+20. Backfill was placed into the trench on three days, with the daylighted backfill closing the north end of the open trench to station 18+20. The mechanical rig was used primarily to clean the trench bottom and the hydraulic rig excavated the trench to a greater depth.

Due to a severe thunderstorm on May 19, only stormwater pumping and site maintenance was performed on this day. On the same day, a section of HDPE pipe located north of extraction well EW-2, which conveys extracted groundwater to American Bottom Treatment Facility, was damaged by a backhoe during site maintenance activities. The pumping system was down for approximately 11 hours on that day. The problem was fixed on the next day.

**Groundwater Migration Control System (GMCS)**

During the week, the river elevations increased from 388.81 feet above mean sea level (amsl) on May 17 to 395.16 ft amsl on May 21. As a result, the combined flow rate of the extraction well system decreased correspondingly from 1,205 gallons per minute (gpm) at the beginning of the week to 894 gpm on May 21.

The eight barrier wall piezometers, with four inside and four outside the barrier wall alignment, continued to monitor the groundwater water elevations adjacent to the barrier wall alignment. Table 1 shows the river and piezometer water elevations measured on May 21, 2004 (15:30 PM). Water levels measured inside the barrier wall alignment were generally within two feet (plus or minus) difference from those measured outside the barrier wall alignment. Nevertheless, the river elevations were generally higher than those

measured at all eight piezometers throughout the week, indicating an inward groundwater flow direction toward Site R.

**TABLE 1**  
River and Piezometer Water Elevations – May 21, 2004 (15:30 PM)

	<b>Elevation (ft above mean sea level)</b>
River Level	395.16
Piezometer 1S – inside wall (northern-most pair)	390.11
Piezometer 1N – outside wall (northern-most pair)	389.33
Piezometer 2E – inside wall (north-central pair)	389.46
Piezometer 2W – outside wall (north-central pair)	391.03
Piezometer 3E – inside wall (south-central pair)	388.37
Piezometer 3W – outside wall (south-central pair)	390.54
Piezometer 4E – inside wall (southern-most pair)	388.05
Piezometer 4W – outside wall (southern-most pair)	390.38

## Stormwater

Rain on May 19 caused some pooling of stormwater within and outside the exclusion zone. The accumulated stormwater was pumped from within the exclusion zone into the north modutank. The stormwater in the north modutank was conveyed to the south modutank on May 2 and then to American Bottoms Regional Treatment Facility (ABRTF) for further treatment.

## Slurry Mixing

Approximately 65 tons of bentonite powder was used to mix fresh slurry this week. The slurry, when pumped from the south holding pond to the open trench, was tested frequently to assess its viscosity and adjusted with a blending pump using water from the fire hydrant, as necessary. The viscosity of the slurry was measured using a Marsh funnel, with results generally meeting the specification.

## Spoils Handling

During the week, numerous truck loads of spoils were transferred from the southern portion of the exclusion zone to the temporary stockpile area on top of the landfill.

## Barrier Wall Construction

Inquip continued excavation of the trench along the south arm of the barrier wall alignment with the hydraulic clamshell rig for deeper excavation and with the mechanical clamshell rig to clean the trench bottom.

As of May 21, the open trench was approximately 1,200 feet in length along the barrier wall alignment from station 6+20 towards station 18+20 (please refer to Solutia's map for locations).

Fresh bentonite slurry was pumped into the open trench as needed to keep the excavation open on four days of the week. Slurry samples were collected from the top and the bottom of the trench daily; fresh and trench slurry samples were tested for viscosity, density (unit weight), filtrate loss, pH and sand content during the week. All the results either met the specifications or satisfied the quality targets. Note that the mechanical desander delivered to south end of Site R has been performance tested and will be put into operation next week.

During the week, Inquip mixed and placed into the trench approximately 1,050 cubic yards of backfill materials. Backfill operations took place on three days of the week. The backfill consists of spoils with the addition of approximately 15 percent of clay and one percent of bentonite (from trench slurry) in dry weight. The backfill was tested by PSI for slump, unit weight and moisture content. All test results reviewed met the minimum requirements.

The bottom of the trench at and ahead of the backfill toe was cleaned using the clamshell rig prior to the backfill placement. Depth-to-bottom measurements were made every 10 linear feet of trench to ensure the bottom of the trench was at a consistent depth and on top of bedrock. These depth measurements were performed with the clamshell rig's instrumentation and confirmed in two locations manually with the downrigger (plumbob on wire). Two samples were collected by PSI with a clam sampler from the top of the placed backfill in the trench prior to backfill placement daily. These samples were visually checked to ensure that the backfill surface in the trench was clean and free of any sand.

During the week, the trench depths were generally measured once at the end of the day except for May 19, when no excavation or backfill activities took place. However, an additional round of depth-to-bottom measurements was conducted on the morning of May 2 before backfill placement. The afternoon trench depth measurements were made every 100 linear feet of trench, with 20-foot spacing of measurements on either side of the backfill toe. The trench depth measurements from the afternoon of May 21, after the backfill placement into the trench, are shown in Table 2. The trench profile is depicted in Graph 1, and is compared to the trench depth profile measured the end of the previous week (May 13). Graph 2 shows the overall progress of the barrier wall construction.

## Other Activities

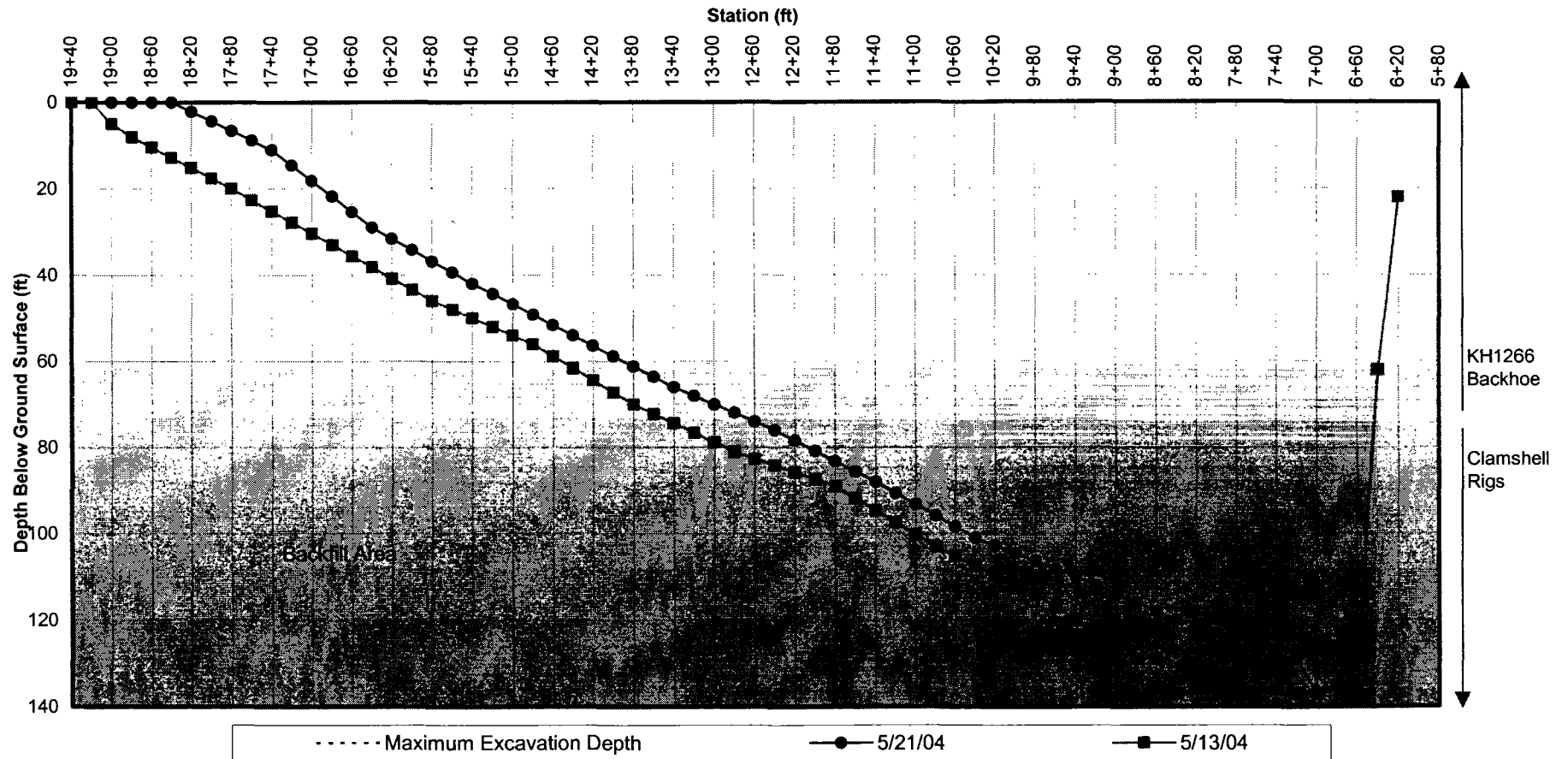
Pangea was onsite, pretrenching at the north side of Site R to prepare for future barrier wall excavation. A small backhoe was used to remove the concrete slabs from the road and to excavate the barrier wall footprint to a maximum depth of ten feet to explore the underground utilities. The excavation pit was backfill with the spoils afterward. The benzene line was still in place and has not been removed.

Inquip started to build the work platform near the northwest corner of the barrier wall alignment and extending along the northern leg. The work platform is constructed of gravel and finer rock aggregates and will be compacted to form a base upon which the excavation equipment will operate.

**TABLE 2**  
Trench Profile (Downrigger Measurements) for the Barrier Wall Trench – May 21, 2004 (PM)

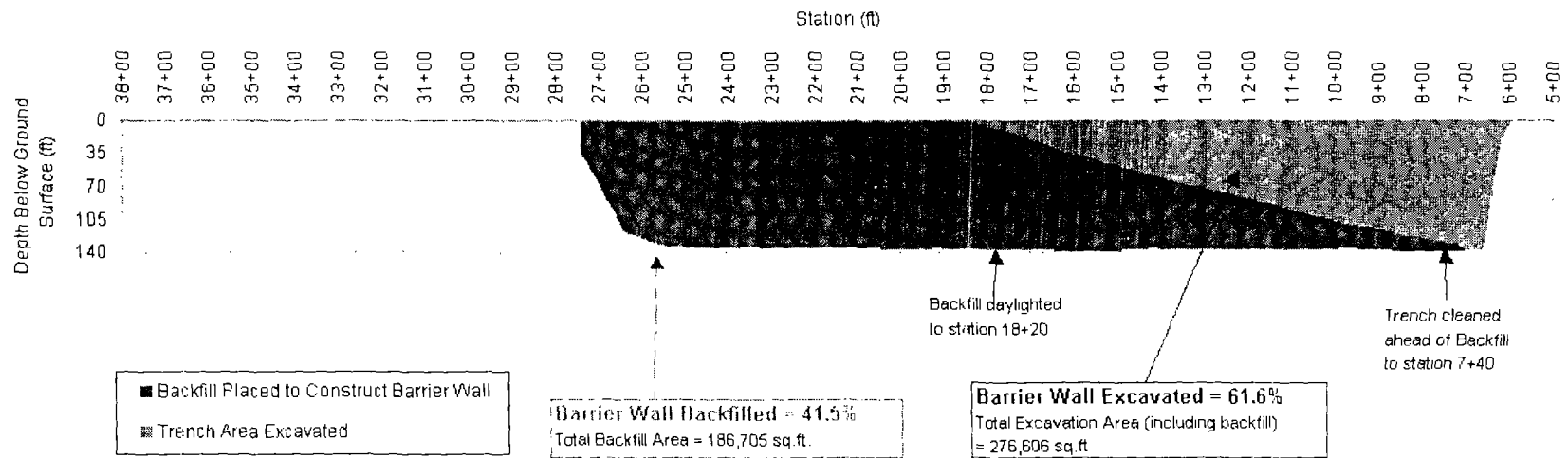
Station ID	Depth to bottom (ft below ground surface)
6+20	22
6+40	62
6+60	135
6+80	135
7+00	137
7+20	129
7+40	128
7+60	126
7+80	124
8+00	123
8+20	121
8+40	120
9+40	110
10+40	101
11+40	88
12+40	76
13+40	66
14+40	54
15+40	42
16+40	29
17+40	11
18+20	3

**Graph 1 - Weekly Barrier Wall Construction Progress  
May 17 through May 21, 2004**



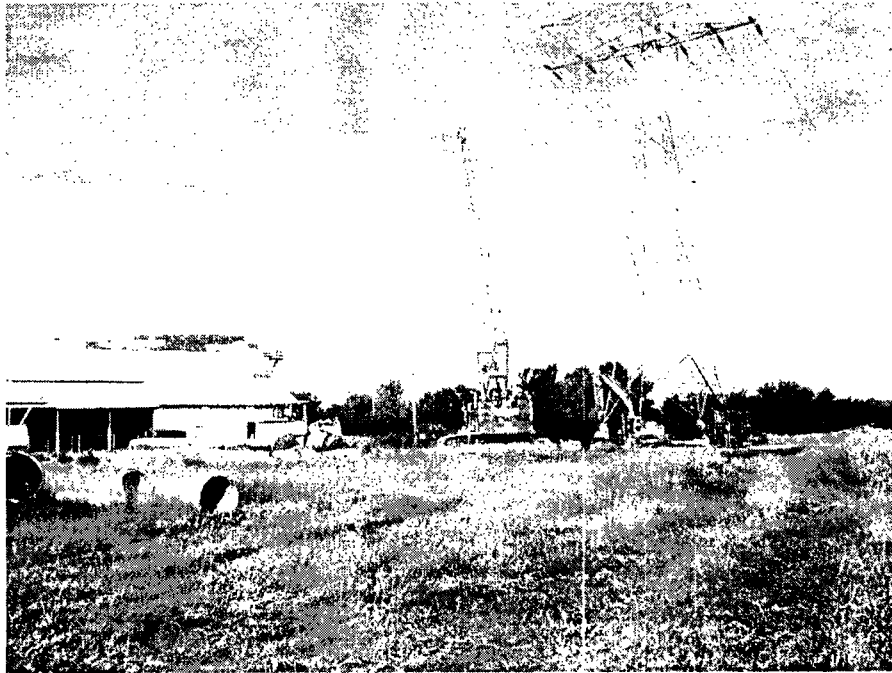
Note: Data plotted for the week through PM measurements on 5-13-04 and 5-21-04.  
Some data points are interpolated between the available data points where trench depth measurements were read.

**Graph 2 - Barrier Wall Construction Progress by May 21, 2004 (PM)**

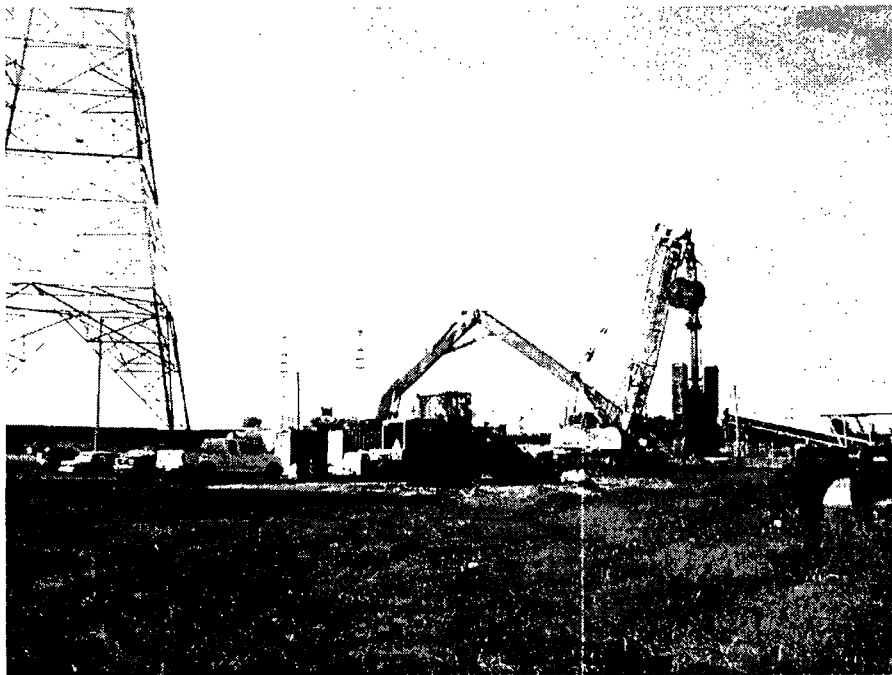


Note: Data plotted for week through PM measurements on 5-21-04.

Photos from May 17 through May 21, 2004:



Mechanical desander (in blue) set up at the southwest corner of Site R (May 20, 2004).



Excavating at the southeast corner of Site R (May 21, 2004).